

**ABSTRACT**

The invention provides a method of analysing a complex hydrocarbon-containing mixture, the method comprising the steps of: obtaining a liquid sample of the complex hydrocarbon-containing mixture; injecting the sample into a liquid carrier flowing to a mass spectrometer, wherein the mass spectrometer is set so as to ionise molecules in the sample without causing fragmentation thereof; recording a mass spectrum for ions obtained from the sample; and using the mass spectrum to obtain fingerprint of the mixture. In one embodiment, two or more mass spectra are recorded and are combined to obtain a fingerprint of the mixture.